

WHAT IS CLAIMED IS:

1. In a battery-operated light comprising a first light source, a battery and a first switch in circuit for selectively energizing the first light source to produce light:
 - a source of a reference potential;
 - a comparator responsive to a potential produced by the battery and to the reference potential for de-energizing said first light source when the battery potential is below a predetermined potential;
 - a second light source that operates at a lower current than does said first light source to produce light; and
 - a second switch in circuit with the battery for selectively energizing said second light source to produce light.
2. The battery-operated light of claim 1 wherein said second switch is operable independently of said first switch and/or is operable responsive to said comparator de-energizing said first light source when the battery potential is below the predetermined potential.
3. The battery-operated light of claim 1 wherein said second switch comprises a transistor having a controllable conduction path in circuit with the battery and said second light source and having a control terminal coupled to said comparator for controlling said second light source responsive to said comparator de-energizing said first light source when the battery potential is below the predetermined potential.
4. The battery-operated light of claim 1 wherein said source of reference potential comprises a diode and/or a Zener diode and/or a resistive voltage divider.

5. The battery-operated light of claim 1 wherein said comparator comprises a first transistor having a controllable conduction path in circuit with the battery and said light source for energizing and de-energizing said light source and having a control electrode to which said source of reference potential is coupled.
6. The battery-operated light of claim 5 further comprising a resistive voltage divider coupling said source of reference potential to the control terminal of said first transistor.
7. The battery-operated light of claim 5 further comprising a second transistor having a controllable conduction path in circuit with the battery and said source of reference potential and having a control terminal coupled to the controllable conduction path of said first transistor.
8. The battery-operated light of claim 5 wherein said second switch comprises a second transistor having a controllable conduction path in circuit with the battery and said second light source and having a control terminal coupled to the controllable conduction path of said first transistor.
9. The battery-operated light of claim 1 wherein said first light source includes an incandescent lamp and said second light source includes a solid state light source and/or a light emitting diode.
10. The battery-operated light of claim 1 further comprising means for energizing said second light source responsive to said comparator de-energizing said first light source when the battery potential is below the predetermined potential.

11. The battery-operated light of claim 10 wherein said means for energizing comprises a second transistor having a controllable conduction path in circuit with the battery and said second light source and having a control terminal coupled to a controllable conduction path of a first transistor of said comparator.
12. In a battery-operated light comprising an incandescent light source, a battery and a first switch in circuit for selectively energizing the incandescent light source to produce light:
 - a source of a reference potential;
 - a comparing circuit responsive to a potential produced by the battery and to the reference potential for de-energizing said incandescent light source when the battery potential is below a predetermined potential;
 - a solid state light source; and
 - a second switch in circuit with the battery for selectively energizing said solid state light source to produce light independently of said first switch and/or when the battery potential is below the predetermined potential.
13. The battery-operated light of claim 12 wherein said source of reference potential comprises a diode and/or a Zener diode and/or a resistive voltage divider.
14. The battery-operated light of claim 12 wherein said second switch is operable responsive to said comparing circuit de-energizing said incandescent light source when the battery potential is below the predetermined potential.

15. The battery-operated light of claim 12 wherein said second switch comprises a transistor having a controllable conduction path in circuit with the battery and said solid state light source and having a control terminal coupled to said comparing circuit for controlling said solid state light source responsive to said comparing circuit de-energizing said incandescent light source when the battery potential is below the predetermined potential.
16. The battery-operated light of claim 12 wherein said comparing circuit comprises a first transistor having a controllable conduction path in circuit with the battery and said incandescent light source for energizing and de-energizing said incandescent light source and having a control electrode to which said source of reference potential is coupled.
17. The battery-operated light of claim 16 further comprising a resistive voltage divider coupling said source of reference potential to the control terminal of said first transistor.
18. The battery-operated light of claim 16 further comprising a second transistor having a controllable conduction path in circuit with the battery and said source of reference potential and having a control terminal coupled to the controllable conduction path of said first transistor.
19. The battery-operated light of claim 16 wherein said second switch comprises a second transistor having a controllable conduction path in circuit with the battery and said solid state light source and having a control terminal coupled to the controllable conduction path of said first transistor.
20. The battery-operated light of claim 12 further comprising means for energizing said second light source responsive to said comparing circuit de-energizing said light source when the battery potential is below the predetermined potential.

21. The battery-operated light of claim 20 wherein said means for energizing comprises a second transistor having a controllable conduction path in circuit with the battery and said second light source and having a control terminal coupled to the controllable conduction path of said first transistor.
22. A power control for battery-operated apparatus comprising:
- first and second terminals across which a battery potential may be applied;
 - a first transistor having a controllable conduction path between first and second electrodes and having a control electrode for controlling the conduction of the controllable conduction path thereof, the first electrode thereof being coupled to said first terminal;
 - a second transistor having a controllable conduction path between first and second electrodes and having a control electrode for controlling the conduction of the controllable conduction path thereof, the first electrode thereof being coupled to said second terminal; and
 - a source of reference potential coupled between the second electrode of said first transistor and the control electrode of said second transistor;
- wherein the second electrode of said second transistor is coupled to the control electrode of said first transistor and to said first terminal via a load.
23. The power control of claim 22 further comprising a third transistor having a controllable conduction path between first and second electrodes and having a control electrode for controlling the conduction of the controllable conduction path thereof, the first electrode thereof being coupled to a second load and the control electrode thereof being coupled to the second electrode of said second transistor.
24. The power control of claim 23 further comprising a switch in circuit with the second load and said third transistor for making and breaking connection with said first terminal.

25. The power control of claim 23 wherein said load includes an incandescent lamp and said second load includes a solid state light source and/or a light emitting diode.
26. The power control of claim 22 further comprising a switch in circuit with said load and said first and/or second transistor for making and breaking connection with said first terminal.
27. The power control of claim 22 wherein said source of reference potential comprises a diode and/or a Zener diode and/or a resistive voltage divider.
28. A power control for battery-operated apparatus comprising:
 - first and second terminals across which a battery potential may be applied;
 - a first switch having first and second ends, the first end thereof being coupled to said first terminal;
 - a first transistor having a controllable conduction path between first and second electrodes and having a control electrode for controlling the conduction of the controllable conduction path thereof, the first electrode thereof being coupled to said second terminal; and
 - a source of reference potential coupled between the second end of said first switch and the control electrode of said second transistor;
 - wherein the second electrode of said first transistor is coupled to said first terminal via a load.
29. The power control of claim 28 further comprising a second transistor having a controllable conduction path between first and second electrodes and having a control electrode for controlling the conduction of the controllable conduction path thereof, the first electrode thereof being coupled to a second load and the control electrode thereof being coupled to the second electrode of said first transistor.

30. The power control of claim 29 further comprising a second switch in circuit with the second load and said second transistor for making and breaking connection with said first terminal, wherein said second switch is operable independently of said first switch.
31. The battery-operated apparatus of claim 29 wherein said load includes an incandescent lamp and said second load includes a solid state light source and/or a light emitting diode.
32. The battery-operated apparatus of claim 28 wherein said source of reference potential comprises a diode and/or a Zener diode and/or a resistive voltage divider.
33. The battery-operated apparatus of claim 28 further comprising a second transistor having a controllable conduction path coupled between the battery and said source of reference potential and having a control terminal coupled to the controllable conduction path of said first transistor.
34. In a battery-operated flashlight comprising a first light source, a battery and a first switch in circuit for selectively energizing the first light source to produce light:
 - a source of a reference potential;
 - a comparator responsive to a potential produced by the battery and to the reference potential for de-energizing said first light source when the battery potential is below a predetermined potential; and
 - a second light source that operates to produce light at a lower current than does said first light source, wherein said second light source is operable from the battery to produce light at least after said comparator de-energizes said first light source.